

## The Claims

What is claimed is:

1. A rocking seat control apparatus, which comprises:
  - a moveable seat supported and having a magnetic member attached thereto;
  - a solenoid means for bi-directionally attracting said magnetic member repetitively to cause the seat to move in a positive and a negative direction alternately and thereby to be rocked;
  - an amplitude measuring means for measuring an amplitude of the seat being rocked and a rocking motion of the seat;
  - an amplitude damping factor measuring means responsive to displacements in the positive and negative directions of the seat being rocked for measuring an extent of damping factor of said amplitude caused while the seat is being rocked; and
  - a solenoid energizing means for energizing said solenoid means for a time period in which the seat is being rocked traveling a distance that is a product of said measured rocking motion and said measured extent of damping factor of amplitude.
2. A rocking seat control apparatus as set forth in claim 1, characterized in that said magnetic member comprises a pair of magnetic sub-members attached to the seat and whose mid point is positioned displaced from a mid point of said solenoid means by a predetermined distance.
3. A rocking seat control apparatus as set forth in claim 1 or 2, which further comprises:
  - a first light emitter disposed below a path of the seat

being rocked;

a second light emitter united to said first light emitter;

a first light reflector including a plurality of light reflector plates attached to the seat as arranged in a row and spaced apart from one another across a predetermined spacing in a first direction in which the seat is rocked for reflecting light emitted from said first light emitter;

a second light reflector including a plurality of light reflector plates attached to the seat as arranged in a row and spaced apart from one another across a predetermined spacing in a second direction parallel to said first direction for reflecting light emitted from said second light emitter, said light reflector plates of the first light reflector being deviated in position from said light reflector plates of the second light reflector by half a width of each of said light reflector plates of the first light reflector;

a first light receiver mounted united to said first light emitter for receiving light reflected back from said first light reflector;

a second light receiver mounted united to said second light emitter for receiving light reflected back from said second light reflector;

a change of rocking direction detecting means responsive to a light receiving pattern of said first and second light receivers for detecting a reverse motion of the seat being rocked; and

a seat amplitude measuring means responsive to numbers of light reception signals issued by said first and second light

receivers for measuring an amplitude of the seat.

4. A rocking seat control apparatus as set forth in claim 3, characterized in that said light reflector plates of first light reflector and those of second light reflector are equal in width and spacing to each other, and the spacing across which successive light reflector plates of each of said first and second light reflectors are spaced apart is equal to the width of each of the reflector plates of said first and second light reflectors.

5. A rocking seat control apparatus, which comprises:  
a moveable seat supported and having a magnetic member attached thereto;  
a solenoid means energizable to bi-directionally attract said magnetic member repetitively, thereby rocking the seat;  
a drive circuit for drivingly energize said solenoid means; and  
a  $1/f$  spectrum fluctuation computing circuit adapted to compute a target value corresponding to a target rocking motion of the seat being rocked in a mode of  $1/f$ -type spectrum fluctuation and to enter said target value into said drive circuit.

6. A rocking seat control apparatus as set forth in claim 5, characterized in that said  $1/f$ -type spectrum fluctuation computing circuit includes an initial value input means adapted to be entered with initial values of said  $1/f$ -type spectrum fluctuation.

7. A rocking seat control apparatus as set forth in claim 5 or claim 6, characterized in that it further includes a target rocking motion input means for producing a target value corresponding to a target rocking motion; and a switching means for selectively connecting one of said 1/f-type spectrum fluctuation computing circuit and said target rocking swing input means to said drive circuit.